



Delivery Lot Summary Report: Delivery Lot 4

June 19, 2015

USGS Contract: G10PC00026

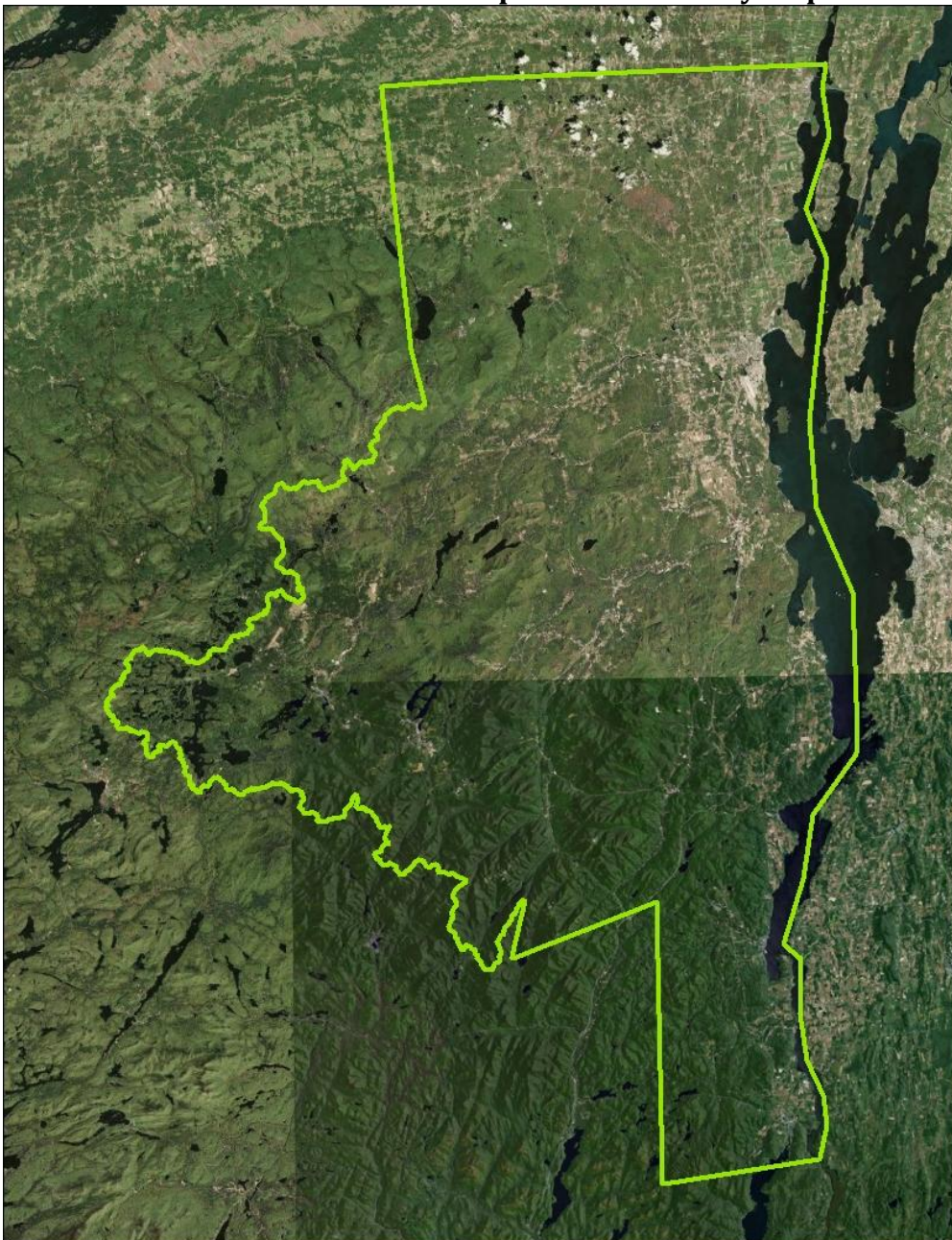
USGS Task Order: G14PD00943

Task Order Name: 2014 New York Clinton-Essex-Lake Champlain QL2 LiDAR Task Order

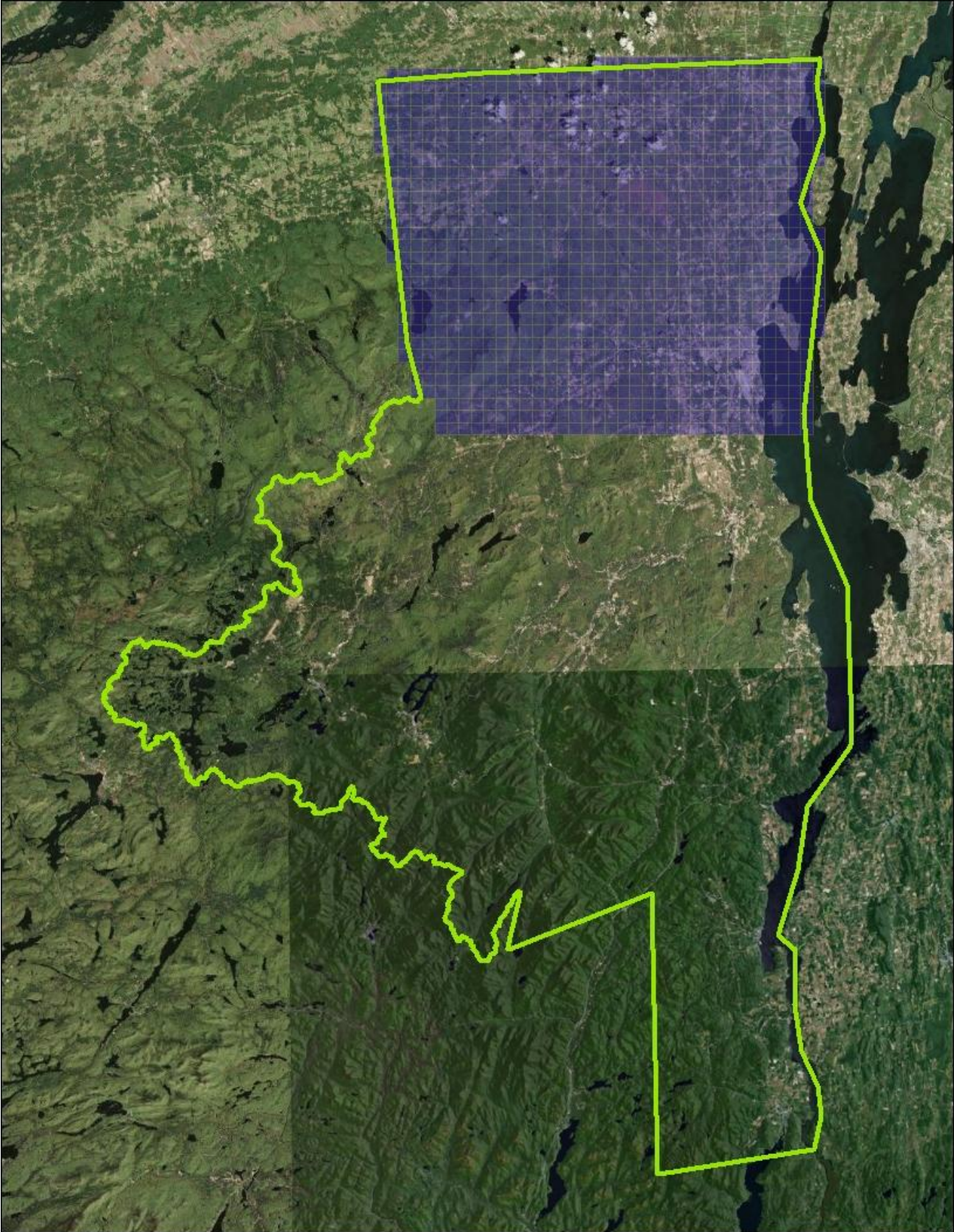
Contractor: Photo Science, A Quantum Spatial Company

The following is a summary description of the deliverables and other pertinent information that comprise the shipment of Delivery Lot 4 to USGS on June 19, 2015.

New York Clinton-Essex-Lake Champlain AOI Delivery Map:

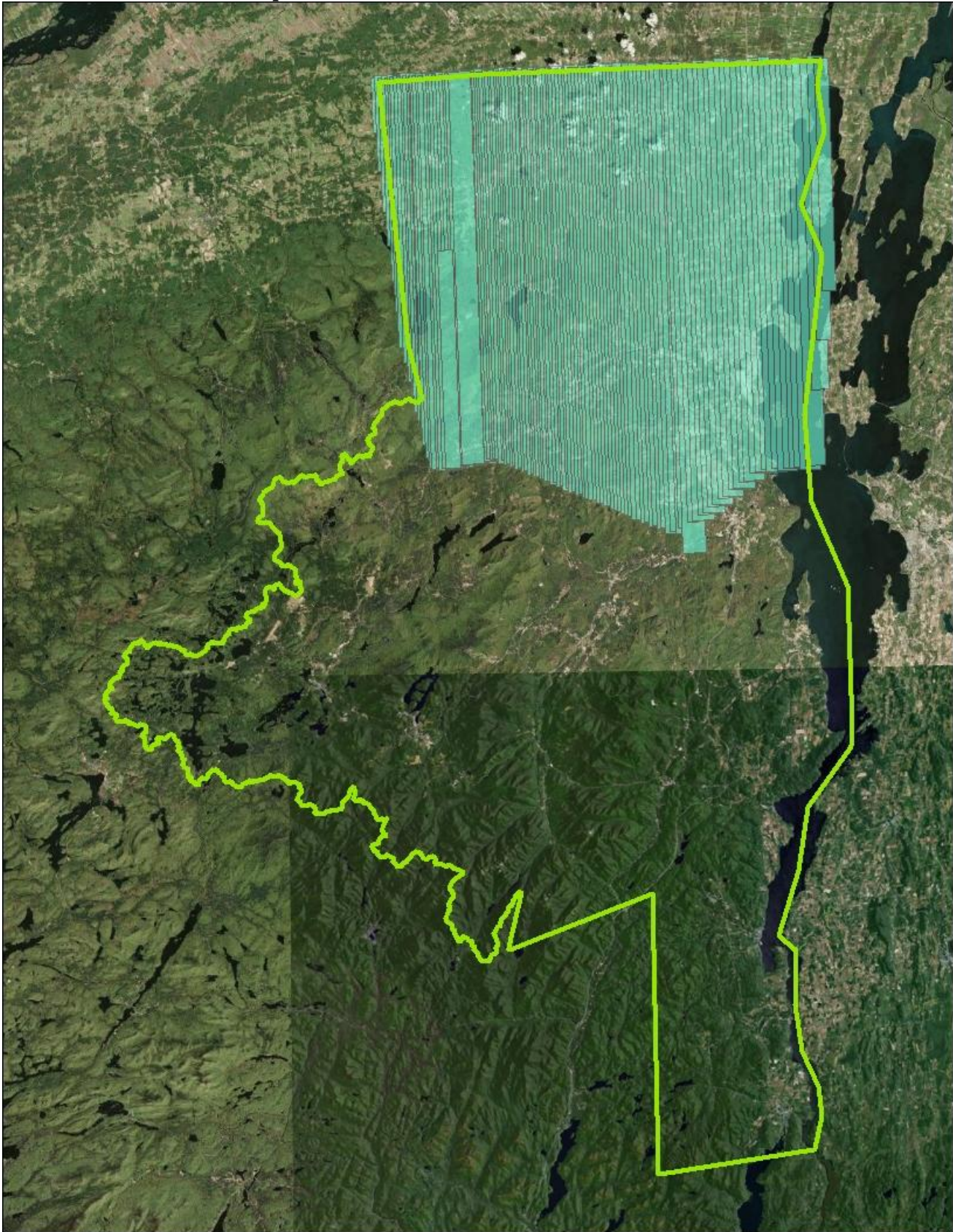


Delivery Lot 4 Map:



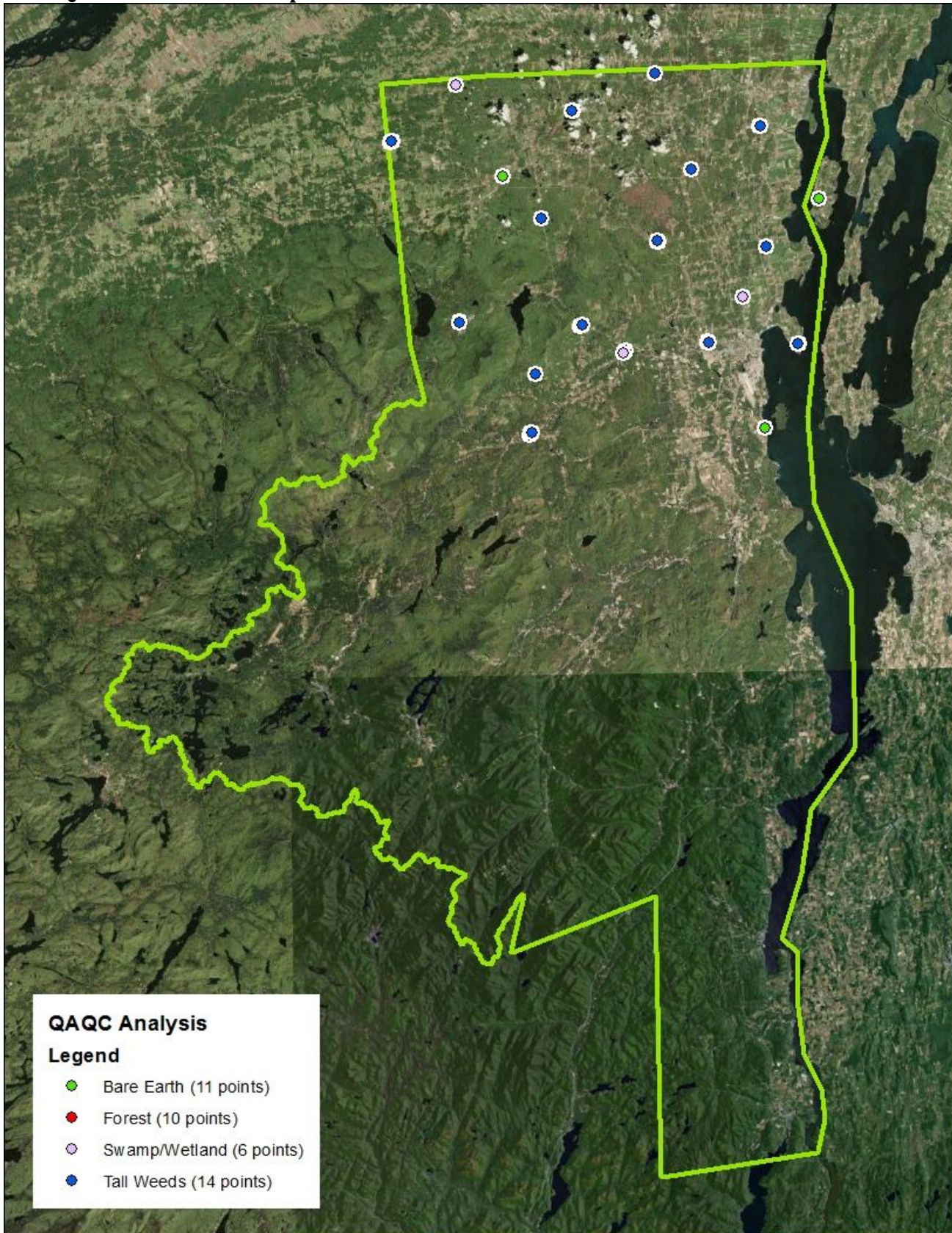


Lot 4 Raw Point Cloud Map:





Lot 4 QA Control Points Map:



**Task Order Spatial Reference System:**

- Horizontal: NAD 1983, UTM Zone 18 North
- Vertical: NAVD88, GEOID12a, Meters

Deliverables Summary:

1. C.1.d.(i) Raw Point Cloud Data (calibrated and control adjusted): Included
 - LAS v1.2, Point Record Format 1
 - Total Number of Swath Files: 123
 - Total File Size: 700 GB (752,165,466,112 bytes)
 - Individual Swath Outline Shape File
2. C.1.d.(ii) Classified Point Cloud: Included
 - LAS v1.2, Point Record Format 1 including File Source ID w/assigned value of 65,535
 - Classification Schema:
 - (01) Code 1 – Processed, but unclassified
 - (02) Code 2 – Bare-earth ground
 - (03) Code 7 – Noise
 - (04) Code 9 – Water
 - (05) Code 10 – Ignored Ground (Breakline Proximity)
 - (06) Code 17 – Overlap Default
 - (07) Code 18 – Overlap Ground
 - (08) Code 25 – Overlap Water
 - Total Number of Tiles: 1,066
 - Tile Dimensions: 1,500m x 1,500m
 - Total File Size: 608 GB (653,569,949,696 bytes)
 - Delivery Lot 4 Tile Shape Files (Lot 4 Boundary & Lot 4 Individual Tiles)
3. C.1.d.(iii) Bare Earth Surface (Raster DEM): Included
 - Format: ERDAS .IMG
 - Resolution: 1.0 meter grid cell size
 - Hydro Conditioning: Hydro Flattened
 - Total Number of Tiles: 1,066
 - Tile Dimensions: 1,500m x 1,500m (same used for Classified Point Cloud)
 - Total File Size: 8.84 GB (9,502,220,288 bytes)
4. C.1.d.(v) Control:
 - Complete Control Report dated April 28, 2015 containing published values
 - Delivery Lot 4 QA Control Check Point Location Shape File Extract: Included
 - Deliver Lot 4 QA Control Check Point Published Values Extract .xls file: Included
5. C.1.d.(vi) LiDAR Intensity Image: Included
 - Format: Grayscale, 8-bit, GeoTiff
 - Resolution: 1.0 meter grid cell size
 - Total Number of Tiles: 1,066
 - Tile Dimensions: 1,500m x 1,500m (same used for Classified Point Cloud)
 - Total File Size: 3.08 GB (3,318,693,888 bytes)



6. C.1.d.(vii) Breaklines: Included
 - Format: ESRI Shape File (.shp)
 - Coverage: Lot 4 Continuous, Non-Tiled
 - Total File Size: 1.80 MB (1,032,192 bytes)
7. C.1.d.(viii) Metadata: Included
 - Format: FGDC compliant, XML
 - File Types: Project, Lift, Tiled deliverable product group (classified .las, DEM, & Intensity)
8. C.1.d.(ix) Project Report:
 - Delivery Lot Summary Report: Lot 4 Included
 - Overall Project Report: To Be Delivered upon final acceptance of all Delivery Lots.
9. Lot 4 QA & Accuracy Reporting
 - FOCUS Report: Included
 - Lot 4 Provisional FVA/SVA/CVA Testing Results: .xls file Included
 - LAS Analysis (Excel File): Included
 - Raster Analysis (Excel File): Included

Lot 4 Provisional Accuracy Reporting:

- Number of QA Check Points falling within Delivery Lot 4 by Tested Land Cover Type:
 - Bare Earth (BE): 11
 - Forested (FO): 10
 - Tall Weeds (TW): 14
 - Swamp / Wetland (SW): 6
- Testing Results

Raw FVA

	Count	Minimum	Maximum	St. Dev	RMSE	95%	95th	Mean	Median	Skew
RAW FVA	11	-0.142	0.118	0.074	0.078	0.153	-	-0.03	-0.04	0.50

FVA, SVA, CVA

	Count	Minimum	Maximum	St. Dev	RMSE	95%	95th	Mean	Median	Skew
SVA	30	-0.118	0.472	0.132	0.160	-	0.307	0.07	0.04	0.97
CVA	41	-0.118	0.472	0.131	0.137	-	0.255	0.05	0.02	1.25
Bare Earth (FVA)	11	-0.102	0.114	0.063	0.066	0.130	-	-0.03	-0.05	1.05
Tall Weeds	14	-0.115	0.472	0.148	0.185	-	0.331	0.12	0.09	0.82
Forested	10	-0.118	0.037	0.055	0.059	-	0.036	-0.03	-0.02	-0.65
Swamp/Wetland	6	-0.065	0.350	0.142	0.187	-	0.309	0.13	0.15	0.13

Delivery Lot Notes/Comments:

Delivery Lot 4 includes recent agreement between USGS and Quantum Spatial on the population of the file source ID for classified tiled .las file using a numeric value of "65,535". All task order classified .las tiles file source ID will be populated with this numeric value.